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THERAPEUTIC APPLICATIONS OF YOGA-A REPORT

by

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Therapeutic Applications of Yoga-A Report

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SUMMARY Preliminary studies to ascertain the efficacy of Yoga therapy in the treatment of psychosomatic ailments and to develop sets of Yogic practices suited to different ailments are presented in this report. The clinical investigations and the case notes of the patients treated in Yoga therapy hospital at Kanyakumari and outpatient Yoga therapy centres at Trivandrum and Nagercoil reported in this work include the following ailments:—

- a) Bronchial Asthma, Nasal allergy, Chronic Bronchitis.
- b) Diabetes Mellitus and obesity.
- c) Ulcerative Collitis and Irritable Bowel syndrome.
- d) Hypertension and Ischaemic Heart diseases.
- e) Anxiety neurosis and psychosis, Migraine and tension headaches and low back Pain.

The data clearly indicate a significant qualitative improvement in almost all patients.

This work has Paved way to more systematic reasearch to establish the efficacy of Yoga Therapy in the treatment of ailments of psychosomatic origin.

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1. NEED OF YOGA THERAPY:

The past few decades have revolutionised the pattern of life of human beings in the whole world. The growth of civilization is almost totally directed towards the ideal of material prosperity and affluence. The progress of science and technology has given man a variety of appliances for comfort, symbolizing such an affluence and growth of civilization. Associated with this growth, the materialistic outlook of man has further increased his needs. The appliances have failed to satiate his desires and bring about satisfaction, peace and composure. Instead, the dissatisfactions and frustrations have grown causing thereby stresses and strains at the physiological as well as psychological level. Further, the outer atmosphere charged with monotony, speed, competition etc., has intensified these stresses. The repercussions of these stresses have started manifesting themselves as ailments. Notwithstanding the tremendous advancements made in the field of modern medical science and the understanding of the human system, new diseases have cropped-up continuously challenging the advent of new drugs. Disorders of the psychosomatic type have posed greater challenges than ever to medical researchers who have started slowly realising the limitations of a purely objective approach and have started experimenting with and including in the treatment, the principles and techniques available in various other systems prevalent in different parts of the world. Yoga is prominent amongst these new principles and techniques.

Although Yoga has been used in India over centuries for treating diseases, it has gained recognition in the modern medical

field as a special line of treatment only over the last decade. Now, there is scientific evidence for the beneficial effects of Yogic practices in some diseases. The common ailments like High Blood Pressure, Diabetes Mellitus, Bronchial Asthama, Peptic Ulcer, Obesity, etc., are treatable by Yogic practices. In some common ailments, stress plays a major role in their causation and continuation.

Each individual is equipped with the memory-store of a lifetime of previous experiences and emotionally-charged perception of things, events and especially people in his environment. Stresses, both physical and emotional, are encountered by all of us. Our ability to surmount them depends partly on our inheritance and partly on our several life histories. Traumatic experiences during crucial stages of early development leave us predisposed both to neurosis and to psychosomatic illness. It is probable that genetic factors, which have endowed some of us with a particularly vulnerable organ or organic system, will dictate both, the occurrence of a psychosomatic illness (which often indeed co-exists with neurotic symptoms) and the choice of the organ which is affected. Treatment of the local physical factors and disregard of the emotional disturbance, or vice versa, will seldom benefit the patient, and an assessment must be made in each case of the relative importance of these two factors, so that whichever appears to have greater significance can be the main target for therapy.

2. YOGA CLARIFIED:

Many years back we met an American. We were surprised when he told us that

he was familiar with YOGA. We urged him to narrate what he knew. He had heard the name YOGA in recent times, read a few news items here and there and sometimes witnessed some demonstrations on T. V. He described the Yoga demonstration he had visualised "a person appeared on a spacious dias with a lengthy rope in his hand. Drawing the attention of the curious audience he threw one end of the rope holding the other. The rope went swirling up and stood vertical with its upper end staying unsupported in mid-air. The person used the vertical rope as a ladder and climbed up effortlessly to reach the top of the rope offering salutations to the audience from his mid-air position", the American explained the rope trick and added "what a great feat: The person was marvellous, a great Yogi".

Next he went on to narrate another visualisation about Yoga. "The man got ready for his next Yoga show 'he continued;' he showed us hard glass bottles. He crushed them to powder by the mere strength of the muscles of his hand. He then just ate the whole stuff in! After eating up powder-glass of a few more bottles, he took from his assistant a beaker full of strong fuming Nitric Acid and drank in one gulp. We were all up on our toes. Next came the grand show; he vomitted out all the acid and powdered glass! We were thoroughly bewildered with this 'Yoga' show. Many adventurous young men jumped to him to learn Yoga from him! The person was convinced that he understood 'Yoga' which was evident in his enthusiastic narration. Many such weird conceptions prevail among some foreigners even today.

We can forgive and forget this misconception to pass in a land totally alien to this subject, Yoga. But what about the conception of people living in a country, where Yoga took its origin, got highly developed and had influenced the whole life structure? The conception of Yoga prevalent amidst the common folk appears equally dubious. "A long-haired half-naked person is seen ready to enter into a pit 2 x 1 x 1½ Meters dug deep specially for the demonstration. He enters into it and the top of the pit is totally covered, so that no air enters into it. The man remains inside for several days, often as long as 15 to 30 days. He emerges out of the pit after his long stay fresh and with no symptom of tiredness". He is a great Yogi, the common folks think.

That Yogi will now produce from air a handful of ashes and distributes to the dumbfolded public round him. At the request of the swelling crowd he throws his hand up and showers of water get sprinkled on them. He blesses a couple with a golden ring as a symbol of his assurances of a child to them. He gives fruits to some and many other articles to others. He is soon looked upon as a very great Yogi and a living God.

A Swamy, known for his high spiritual attainments and wisdom, was found amidst his six disciples teaching them the principles of Yoga from Patanjali. The pupil marvelled at the fascinating features of Yoga and its crisp and comprehensive presentation through YOGA Aphorisms. It was then a villager approached Swamiji with a big plate full of fruits coconuts etc., as a token of his respect and offered his Satsanga Salutations. Swamiji blessing him enquired about his welfare.

The villager from his humble posture bending a little forward with folded hands requested Swamiji to tell him about YOGA. All the six disciples sitting there got surprised at the instance of an illiterate villager seeking diving guidance. Excited, one of them readied himself to define YOGA as YOGAH CITTA VRITI..... Swamiji silenced him, turned to the villager and asked him in a flowing voice 'My dear, please elaborate what you want and why?'. The villager voiced his predicament 'Swamiji, it is nearly a week my pet buffalo has got lost. All my trials over these days have turned futile. Many suggested your name to go and seek your guidance in locating the same. I am here with that intention and please help me with Yoga, Mantra-whatever you may call'. The overenthusiastic disciples saw the bright eyes of their master winking at them! These demonstration of Bhugata Samadhi, Siddhis, Magic, Mantras Tantras etc - come in front of the eyes of most people in our land when they hear the term YOGA.

Nowadays Yoga is becoming more popular. It is attracting the attention of the whole world. Millions of Westerners have taken to the practice of Yoga. It has evoked interest in many Indians also. The 'Upper Strata' of the Indian society is also showing great interest! They practise Yoga, to keep good health if not for slimming themselves or as a beauty aid. Most of them think Yoga as Yogasanas. Many among them conceive Yogasanas as bending and twisting of the body into all possible shapes, positions and patterns, standing, inverted on head etc., in general, a sort of physical acrobatics.

Some others have heard of Pranayama also as a powerful Yogic practice which involves strict discipline needing an isolated abode. According to them, the person practising pranayama will sit blowing his nostrils to produce some fierce cracking and bursting sounds and sometimes will be seen closing his nostrils to hold the breath for a long time. On the whole, Pranayama is looked upon as some sort of acrobatics in breathing.

Along with these weird conceptions of Yoga, there are a number of persons who are making sincere efforts to understand what Yoga means by going through many texts on Yoga and by contacting persons well-versed in Yoga. They understand it as 'Patanjala Yoga' one of the Six Indian Philosophies known as Sat Darsanas. One of the great Rshis, Patanjali compiled the essential features and principles of Yoga (scattered in Yoga Upanishads) in the form of 'Sutras', is the eight-limbed Yoga popularly known as 'Astanga Yoga' which gives a systematic approach for developing the mind. The Eight limbs are :

1. Yama (The Disciplines, 'DONTs', Nisedhas')
2. Niyama (The injunctions, Dos', Vidhis')
3. Asana (The posture of the body)
4. Prāṇāyama (The control of Prāṇa, the life-force)
5. Pratyahara (Restraint of Senses from their sense objects).

These first five limbs come under a general heading "BAHIRANGA YOGA". In this, the Bahirindriyas (the external voluntary sense organs) are used to gain control over them and thereby culture the mind. The last 3 limbs are

6. Dhārna (Focussing of Mind)
7. Dhyāna (Deconcentration)
8. Samādhi (Super consciousness)

which are referred to as Antaranga Yoga : here-in the mind is used directly to culture itself.

But the scope of YOGA as portrayed in Bhagavadgita, Upanishads etc. is far more comprehensive. As Swamy Vivekananda puts it 'It is a means of compressing one's evolution into a single life or a few months or even a few hours of bodily existence'. In general, there is a natural process of evolution. The whole creation is evolving. But it may take thousands and millions of years for this natural growth. Man, endowed with the power of discrimination and a conscious thinking faculty, would strongly desire to accelerate his growth. YOGA is one such systematic conscious process which in turn can compress the duration of man's growth greatly.

Sri Aurobindo emphasizes an allround personality development at the physical, mental, intellectual, emotional and spiritual levels. He means by YOGA a methodical effort towards self-perfection by the development of the potentialities latent in the individual. It is a process by which the limitations and imperfections characterizing the ego will be washed away, resulting in a Super-man. He emphasizes an allround personality development at the Physical, mental, intellectual, emotional and spiritual levels.

The word Yoga in Samskrit is derived from the root 'YUJ', 'Uujyate Anēna iti Yogah' - Yoga is union of two things, Yoking of one with the other, merger of one with an other entity. What are those

two things? In the technical terminology of Yoga it is a process of merging of 'JIVĀTMAN' with 'PARAMATMAN'. In common parlance, it simply means that Yoga is a process of expansion of an individual personality to cosmic dimensions, making an ordinary man divine.

Thus Yoga is a systematic process for accelerating the growth of a man at animal level to the level of a normal man, a genius, a superman, a divine man and ultimately makes him merge with Divinity.

DEFINITION OF YOGA :

We have seen so far that Yoga refers to a very comprehensive methodology for accelerating the growth of man in his entirety. With growth, man learns to live at higher states of consciousness. Key to this all-round personality development is the culturing of mind. As Patanjali defines in his second aphorism "Yogah Cittavrtti Nirodhah". Yoga is a process of eliminating all the thoughts in the mind. In Yogavasistha, one of the best texts on Yoga, the essence of Yoga is portrayed beautifully thus: 'Manah Prasamanopayah Yoga Ityabhidhiyate' Yoga is considered as a skilful process to calm down the mind. It is a 'Upayah', a skilful subtle process and not a brutal, mechanical, gross effort to stop the thoughts in the mind. An unskilled layman trying to repair radio is almost sure to spoil it, while an experienced skilful person knows exactly where to lay hands to rectify the malfunctioning of the radio. He operates at a subtle level with understanding. Similarly, in the control of mind a novice tries hard and gets disgusted when he finds himself more 'messedup', while Yoga gives him

the necessary technique to operate at the right place to gain complete mastery. This skill is the trick of allowing the mind to calm down and not to use a brutal force to stop it. Yoga is in allowing all actions and thinking to go on effortlessly. Relaxed action is the trick. Then the man leaps to higher states of consciousness and learns to act staying at those subtler levels. Thereby a Yogi exhibits great efficiency in action as Geetha defines "YOGAH KARMASU KAUSALAM".

THE FOUR STREAMS OF YOGA :

There are a large number of methods of Yoga catering to the needs of different persons in the society. They are broadly classified into four streams by Swami Vivekananda who puts them as Work and Worship Philosophy and Psychic control. Let us understand what they are :

1. The path of work (Karma Yoga) involves doing action with an attitude of detachment to fruits of action. This makes man release himself from strong attachments and thereby brings in him a steadiness in mind which verily is Yoga - "Samatvam Yogah Ucyate".
2. The control of emotions is the key to the path of worship (Bhakti Yoga). In this modern world, man is tossed up and down in the sea of emotional conflicts and onslaughts. The Path of Bhakti is a boon to gain control over emotional instabilities by properly harnessing the energy involved in it.
3. The age of science has made man a rational being. Intellectual sharpness is immanent. Analysis forms the tool. The path of philosophy (Jnana Yoga)

is apt for the keen intellectuals and centred around the analysis of 'Happiness', the vital contribution of Upanishats. Also many other fundamental questions regarding life and reality are taken up.

4. Culturing of mind is the key to success in almost all endeavours in our lives. The Yoga of mind culture (Raja Yoga) gives a practical and easy approach to reach higher states of consciousness. It is based on the Antaranga Yoga of Patanjali's Aṣṭanga Yoga system.

UNITY IN DIVERSITY :

It is quite likely that a beginner gets confused looking at a host of Yogic texts enumerating several methods of Yogic practices. Though the systematic classification of most of them into 4 distinct streams helps them, they wonder which to choose, whether that will suit him etc. For this purpose one has to understand the basic unit among these methods. There is a unity in all these methods since.

1. All these paths lead independently to the same goal.
2. There is the same structural transformation of mind that takes place in the mind as delineated through Raja Yoga. This 'Unity in Diversity' forming the crux of our culture offers a grand note of complimentary nature of various practices. With the proper understanding when persons follow any one or more of these paths, they allow a harmonious and total growth of the personality. Thus 'Yoga' is a vital tool for the development of man, probably more relevant in the modern scientific era than ever before.

YOGA AND SOCIETY :

Society is made of individuals. When the individual becomes happy, peaceful and ever enthusiastic, devoid of laziness and intense selflessness, he is bound to make a good component of the society. A society with a 'Yoga way of life' faced into its infrasturcture can prove an ideal society. And construction of an ideal society had been the quest of man from times immemorial. 'Yoga' is now once again coming to the fore to prove its role as vital to human growth, well being and to the social harmony and peace which alone can make an ideal society.

Thus Yoga as a system for the complete development of the personality is a conscious method for calming down all distractions of mind. It is the amplification of these thoughts that cause stresses at the mental level, which may percolate into the physical framework manifesting as diseases. Hence, Yoga in its general methodology of perfecting an individual through removal of stresses, contains the therapeutic aspects of treating such diseases also.

Vivekananda Kendra, the second phase of the total Vivekananda Rock Memorial plan is a service mission, launched on January 7, 1973 (the day on which Swami Vivekananda was born as per Indian Calendar), has for its objective, service to our people in particular and humanity in general. The term service is used in its broadest sense starting with the basic needs of life as food, shelter, etc., and culminating in the unfoldment of an individual towards higher states of consciousness; Treating the diseased people is one of important service activity taken up by the Kendra. In keeping

with its spiritual orientation in the service activities, the use of yogic practices for the treatment of ailments is chosen.

3. BASIC PRINCIPLES OF YOGA THERAPY :

As described in the previous section, there are a large number of Yogic practices and streams of Yoga. For a particular ailment which of these would be of help and which of them would bring maximum benefit need considerable research. Considering man as a whole, we have tried to adopt a combination of different practices. This integrated approach, we have found in our limited experience working well bringing a quicker perceivable effect than that of using only one of the Yogic practices. Later researches should compare the two approaches and confirm these results. So, in this report we present the symptoms, causes, the principles and the actual Yogic practices used to prevent and treat (some of the modern ailments which are posing) a challenge to the modern medical researchers. The presentation should serve a base to start the work and the purpose of this section is to introduce to novices both in the field of Yoga and medicine, the principles and methods of Yoga Therapy in the background of modern medicine. Thus, the narration is quite qualitative.

A. GENERAL METHODS IN THE THERAPEUTIC APPLICATIONS OF YOGIC PRACTICES

Most ailments require a basic set of about 10 to 12 asanas, 3-4 pranayamas without Kumbhaka, neti and dhouti kriyas and meditation. This basic set of practices which will be common to most patients are given in ANNEXURE-1.

- * Adjust one hour period to fit in some asanas, pranayamas and meditation chosen from the basic set.
- * Once a week asanas can be replaced by kriyas.
- * Jalaneti may be performed daily wherever necessary till benefit is obtained.
- * It is important to start with simple practices and gradually build up over a period of 2-3 weeks depending upon the individual's capacity to learn.
- * Do not encourage over-enthusiasms on the first day as they may be incapacitated with pain of excessive exercises for the next week.
- * Although all asanas are strictly to be performed in a slow manner, we may have to adopt more of loosening exercises and quicker repeated movements in different poses to reduce the weight in overweight patients and in many diabetics.
- * We may select any variations of these asanas to suit the persons, keeping the basic principle, to bring the desired result.
- * Having taken up a case we have to think as to which are the Asanas that the person should not do out of the basic set.
- * Also we have to think as to which of them we should emphasise for the particular problem.
- * Some aged patients will not be able to perform many of the asanas. Hence repetition of simple poses with

breathing will give the desired results. Sometimes we may have to use support of the wall, chair, stool etc. to reach them to the pose.

B. YOGA THERAPY FOR DIFFERENT DISEASES

A brief account of the diseases is given along with the principles and the necessary practices to be emphasised. Wherever necessary the asanas and other practices that should not be performed are also indicated.

B1. RESPIRATORY SYSTEM NASAL ALLERGY OR ALLERGIC RHINITIS OR HAY FEVER :

Symptoms : Repeated sneezing, blocking of nose, nuisance at work, worst early morning or any change of weather or certain foods, dust etc. May be associated with (eosinophilia).

Cause : 1. Hyper sensitivity to foreign substances i.e. allergy (altered reaction).

2. Psychosomatic Factor.

Yoga :

Principle : Progressive desensitisation using non-specific agents like water, catheter etc. With strong will power one learns to tolerate these irritants which the system had learnt to think away as harmful, thus leading to better tolerance of any antigens.

Practice : The **Basic Set** of exercises and asanas are helpful.

Emphasis on : Backward bending poses, relaxation and Kriyas.

Asanas : Bhujangāsana, Cakrāsana.

Breathing : Sectional breathing, Nādi
Śuddhi and Seetkāri
and
Pranayama

Kriyas : Jalaneti – Daily, Catheter Neti-
Once a week.

Bronchial Asthma :

- * Repeated attacks of Bronchial spasm-leading to difficulty in breathing and noisy breathing (wheezing) lasting for 1/2 to 3 hours, a kooing sound while breathing out with increased strenuous breathing. Usually in the early morning 4 A.M., exposure to dust, certain foods, change of temperature, humidity, (humid cold weather), infection, emotion, may bring an attack.
- * Any food may be allergenic. Common ones are the protein foods. Any one of these - fish, meat, dhal, certain vegetable, oils, etc.
- * Cough associated with small amount of sticky sputum difficult to clear.

Cause : Not exactly known - Following are some of the known factors ;

- a) **Heredity :** Runs in families. Some form of allergy – either rhinitis or eczema or asthma may be found in other members of the family.
- b) **Allergy :** Increased sensitivity and abnormal inflammatory response to mild agents.

c) **Psychosomatic :** Plays an important role – personality – sensitive, intelligent, persons cannot express the emotions either in words or expressions – important in inducing and maintaining the attack.

d) **Infection :** Attack is characterised by the narrowing of the air passage (bronchil) due to: 1) Spasm of the bronchial muscle. (2) Swelling (aedema) of the lining membrane of bronchi. (3) Sticky sputum blocking the narrowed passages.

Yoga :

1. Confidence - Allay the anxiety element - Relaxation.
2. Improve vital capacity and develop control over different phases of respiration so that when breathing out becomes difficult during spasm, they can voluntarily increase the breathing out time and overcome the distress. Breathing in Backward bending – Bhujangāsana. Ardha Cakrāsana, Uṣtrasana, alternating with forward bending and twisting poses.
3. To overcome the hypersensitivity – presenting with non-specific mild irritants like the air, water, rubber tube etc. Prāṇāyāma – Ujjāyi, Kapālabhāti, Kriyas – Jalaneti, Cathetar Neti.

4. Increase resistance to infection – regular practice of asanas, breathings and Prāṇāyāma.

5. To remove the indigestion aspect which induces attacks – Agnisara, Uddiyāna, regulated diet (need not put great restriction) – 2 or 3 meals of balanced vegetarian diet. In fact try to remove many of the fears they would have developed for many foods.

Practices : Basic set with emphasis on the breathing exercises performed 2 to 3 times a day.

Allied Disorder : CHRONIC BRONCHITIS – EMPHYSEMA

* Smokers cough – daily cough with white sputum – early morning for 3–4 months in a year – gradually 5–6 years time start becoming breathless on exertion.

Yoga :

Principles : Yama – Stop smoking. Improve vital capacity and clear the sputum. Others – as for Bronchial Asthma.

Rehabilitation after T.B. : Same as above.

CHRONIC TONSILITIS : Due to lowered resistance. In children normal tonsils are bigger than in adults. Repeated sore throat with fever and enlargement of tonsils.

Yoga : Improve general resistance – Basic set.

Improve Local resistance – Śīṭali, Ujjāyi, Jalāneti, Simhamudra.

B2. ENDOCRINES : DISORDERS :

DIABETES MELLITUS : Sweet Urine disease characterised by high blood glucose with glucose in urine leading to many complications.

Symptoms :

Two types – above age of 40, overweight type (Adult type)

– below 48 underweight type (Juvenile type)

(High Blood Glucose + Urine sugar)

Increased thirst, increased appetite, loss of weight in the young and general weakness.

* Usually present with complications.

* Infections – urinary infection – burning urination.

* Skin – non healing boils, ulcers, abscesses etc. delayed healing of wounds.

* Chest – Bronchitis not responding to usual treatment, Tuberculosis.

*** Small artery disease leading to internal bleeding and blockages with haemorrhages in the eyes, brain, heart attacks, kidney failure, neuritis, etc. Problems with pregnancy – usually large baby over 10 pounds, death of baby almost at the time of delivery.

Cause :

Secondary Type – Uncommon due to excess thyroid or Cortisone or some other drugs.

Primary – Cause not definitely known.

Factors known – a) Heredity – if both parents have diabetes one has 25% chances of getting diabetes and also at an earlier age than the parents. If parents have no diabetes – 5% chances of getting diabetes.

b) Over weight.

c) Strees – important in maintaining the disease. Psychological shock seems to trigger off the disease in predisposed persons.

Treatment :

If over weight – the total quantity of carbohydrate must be reduced to 1/4th of their normal intake. If not overweight reduce the CHO to 1/2 of what they were consuming. Example – 3 groups of food restriction.

- Abandon – Sugars, Sweets, Jaggery Sweets, Fruits.
- Reduce the quantity to half – rice, ragi, wheat, potato, carrot, citrous fruits, oils, fish, mutton and milk.
- Allow freely – green leafy vegetables, drinks like fruit juices, butter milk, herbal tea, water, nuts, fruits.

Understand that the carbohydrates are not prohibited but cannot be handled easily by the system – hence if one eats more of one type of Carbohydrates reduce the other e.g. : 1/2 Laddu eaten occasionally at parties = no rice or wheat or ragi on that day. Only allow from (c) group food.

Yoga : Reduce weight – More of stretchings.

Suryanamaskar – 12 times and Basic set of Asanas.

Practices : Normal Weight – breathings. Basic set.

Asanas : Ardhamatsyendra, Yoga mudra, Hamsāsana or Mayūrāsana Agnisāra, Uddiyāna.

Kriyas : Vamana Dhouti – once a week. Kapālabhāti, Bhastrika.

OVERWEIGHT, OBESITY : Same line of Diet and Yoga as for over – weight type of diabetes.

THYROID – LOW FUNCTION (MYXOEDEMA) :

Principle : Stimulating practices. Be cautious if there is heart complications.

- Stimulate thyroid by improving blood supply.
- Release of hormone from gland.

Yoga : Basic set – Emphasis on Wall posture, Sarvāṅgāsana Halāsana, Śīrāṣāsana, Ujjāyi, Bhrāmari.

Over function (Thyrotoxicosis) – Basic set – Emphasis on relaxation.

B3. GASTRO INTESTINAL SYSTEM :

Repeated Mouth Ulcers : Due to indigestion, general low vitality, and psychological upsets. May be associated with diarrhoea.

Yoga : Improve general Resistance – Basic Set.

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Improve local Resistance –
Sadanta, Ujjāyi, Sītkāri,
Bhramari.

PEPTIC ULCER AND HYPERACIDITY:

- * Ulcer formation in stomach – Gastric Ulcer (G.U). Duodenum Ulcer (D.U). Ulcer does not heal easily because of acid irritant pouring all the time over the ulcer zone.

Causes :

- * Hyper acidity – excessive acid secretion is an important factor. Lowered vitality of lining of stomach and duodenum also is a factor. Psychological disturbances – anxiety, depression – may lead to ulceration.

Symptoms : Pain in upper abdomen. Usually related to food.
D.U. – Relieved by food (Hunger pains).
G.U. – Aggravated by food.
Early morning 2 A.M. pain – due to acid bathing the bare ulcer surface.

- Yoga :**
- a) Relaxation in Śavāsana and Makarāsana to remove anxiety aspect.
 - b) To reduce the emotional outbursts and to get the psyche under control basic set by which the general resistance also improves.
 - c) Kriyas – Vamanadhouti and Vastradhouti – Increase local stomach resistances. Also Kriyas improve the blood supply to stomach, increase the resistance and removes some acid

Uddiyāna bandha and Agnisāra Kriya

(a) Increase blood supply to stomach to a great extent.

(b) Improve motility of the bowel

Practices : Basic set. Emphasis on Bhujangāsana, Ardha Salābhāsana, Viparītkarāni Kriya, Pavanamuktāsana, Yogamudra, Ardha Matsyendrasana.

Vamanadhouti – Ācute stage – once in 3 days.

Vastradhouti – In Chronic cases - once in a week. Avoid in acute stage.

Agnisāra, Uddiyāna

Diet : Bland diet with very little chillies, spices and Tamarind. Milk frequently. Fasting in acute stage.

DISORDER OF LIVER AND PANCREAS :

Stimulation of Pancreatic function :

1. In cases of enzyme deficiency with gas formation.

2. Insulin in Diabetes Mellitus.

- * Stimulate their functions – Ardhamatsyendrāsana, Mayūrasana, Yoga Mudra, Agnisāra, Uddiyāna, Bhastrika, Kapālabhāti, Vamāna Dhouti, Vāstra Dhouti.

Soothing of the functions of liver after an attack of JAUNDICE :

Bhujangāsana, Ardha Cakrāsana, Sethubandha, Supta Vajrāsana.

ULCERATIVE COLLITIS :

Common : Diarrhoea with blood and mucus – may be of mild to fatal severity. Associated with some abdominal pain and fever.

Cause : Psychosomatic – common in women, sensitive persons, no vent for emotions – reflects on bowel – easily becomes anxious. (Excess of Apana force due to disturbed samana).

Yoga : Very helpful.

- * Reduce anxiety.
- * Inverted poses mechanically remove the constant downward pressure.
- * Increase resistance of the bowels – Abdomen poses and Kriyas – Sankapraksālana in chronic stage.
- *** Begin with supine lying poses, follow by standing.

Exercises : Straight Leg Raising, wall Posture, Forward Backward Bending.

Asanas : Suryanamaskar, Viparitakarani Mudra, Pavanamuktāsana, Sarvangāsana, Matsyasana, Halāsana, Yogamudra, Vagrāsana, Suptavagrāsana, Padahastāsana, Savāsana.

Breathing and Prānāyāma : Sectional breathing, Nādisuddhi, Kapālabhāti.

Kriya : Vāmana Dhouti, Śankapraksālana (only when acute stage has settled), Agnisara, Uddiyana and Aswini Mudra.

IRRITABLE BOWEL SYNDROME :

* Executives, Office going persons – Morning 4 to 5 motions before going to office, formed stool first, 3rd and 4th unformed mucus. Periodical constipation for a few months. Associated with gargling, occasional abdominal pain going on for years – many courses of treatment as cares amoebiasis.

- Yoga :**
- a) Same as Ulcerative Collitis.
 - b) Relaxation–Add Vagrāsana 10 mins. With Nādisuddhi after meals, with Brahmarpanam mantra.
 - c) Inverted poses.

CHRONIC CONSTIPATION :

Cause : Mainly a bad habit, early morning laziness, lack of roughage in diet.

Diet : Add more roughage – green leaf vegetables, less polished rice and wheat. More fluids, Banāna before retiring to bed. Two glasses of warm water + a pinch of salt first thing in morning followed by Agnisāra, Viparitakarani mudra and Pavanamuktāsana.

Yoga :

Principle : Inverted poses to clear the gases and release the plugging effect followed by standing poses (dynamically).

Exercises : Forward Backward bending, Twisting with bending.

Asanas : Suryanamaskar, Viparitakarani Mudra Pavanamuktāsana, Mayūrasana, Yogamudra, Ardhamatsyendra, Prasāritha Pādahastāsana Paršwakoṇāsana, Cagrāsana.

Pranayama : Agnisara, Uddiyāna, Śankha-
prakṣālana.

B4. CARDIO VASCULAR DISEASES

Prevention of Heart Disease : Regular
practice of basic set.

– Maintenance of weight.

High Blood Pressure : Normal Adult
(30–50 Yrs.)

Blood Pressure :	Systolic	110 – 140
	Diastolic	70 – 90

High Blood Pressure above 140/90 :

* Must check on 3 consecutive
days – High Blood Pressure
to be diagnosed only if B.P.
consistently above 140/90.

1. Secondary Hypertension :

A small percentage are with known
causes.

- Kidney disease (Long standing)
- Endocrine disease : eg. overgrowth
of adrenal gland.
- Drugs – Steroids etc.

2. Primary Hypertension :

In majority of the cases the cause is
not known. Some known factors are :

- Heredity
- Over-weight
- Smoking
- Diabetes
- Stress – modern way of life leading
to persistent sympathetic stimula-
tion, increased sympathetic tone
and high blood pressure.

Treatment :

- Secondary Hypertension Category –
Remove the cause.

- Primary – Drugs used in modern medi-
cine lessen the effect of
sympathetic tone on the
blood vessels, but have many
side effects.

Yoga :

- Principle:** a) Relaxation – to reduce
strain on heart and reduce
sympathetic tone-Savāsana
- b) Revitalisation of heart and
blood vessels – Breathing
in different postures.

**Most Asanas are Contra-Indicated (not to
be performed).** Because of the danger of
bleeding due to sudden raise of blood
pressure while performing stimulating
Postures and Kriyas. These are as follows :

- | | |
|-------------------|------------------|
| (1) Suryanamaskar | (2) Sarvāṅgāsana |
| (3) Halāsana | (4) Matsyāsana |
| (5) Dhanurāsana | (6) Sirsāsana |
- and (7) Dhouti Kriyas are all to be
avoided.

ASANAS : (To be practiced) :

Lossening Exercises : Hand Stretch Brea-
thing, Straight Leg
Raising.

Standing : Ardhakati Cakrāsana, Ardha
Cakrāsana, Pada Hastāsana,
Savāsana – 2 Min.

Sitting : Padmāsana, Supta Vajrāsana.

Prone : Bhujangāsana, Ardhaśalabha,
Śavāsana – 10 Min.

Breathing : Sectional breathing, Nādi-
& Pranayama śuddhi, Śettali, Bhrāmari.

Meditation : Omkara – 5 to 20 mins.

Angina and Heart attack Rehabilitation :

Symptoms : Chest Pain

Behind mid sternum, related to exertion or emotion or eating, constricting band-like pain which may radiate to left arm.

In Angina – pain lasts 1–3 mins. and disappears.

Heart Attack – Same type but prolonged severe pain.

Causes : Transient (Angina) or Permanent (infraction) loss of blood supply to a portion of the cardiac muscle due to narrowing of coronary arteries which supply blood to the heart. There occurs a generalised narrowing of arterioles all over the body due to deposition of cholesterol etc. in the arterial walls.

Treatment : Remove the fear that ‘I am a heart patient’; change the outlook of life.

Yoga :

Principle : Śavāsana (15 mins) – To relax and reduce tension and the strain on Heart and the anxiety of the person.

Breathings (15 mins) – To revitalise and improve blood supply.

Exercises : Hand Stretch Breathing, Straight Leg Raising.

Asanas : Bhujangāsana, Śalabhāsana, Padmāsana, Supta Vajrāsana, Vakrāsana, Ardhakati Cakrāsana, Ardha Cakrāsana, Pada-hastāsana.

Breathing : Sectional Breathing.

Pranayama : Nādisuddhi, Bhrāmari, Seetkāri.

Meditation : 5 – 20 mins.

Others : Study of Vedantic books to bring about an overall personality change from a materialistic outlook to a more detached way of looking at one's own life.

B5. CENTRAL NERVOUS SYSTEM :

HEAD ACHES

Tension Head Ache :

Chronic head ache in forehead or back of head towards the end of the day's strenuous work or week ends while not working hard, in persons who are intellectuals, holding responsible posts – conscientious officials etc.

Migraine : “Ardha Śirsi” – Severe one sided head ache in attacks lasting about 24 hours. Begins with a warning of coloured rings round the light or blurring of vision or nausea and ends with vomiting.

Cause : a) Psychological stress – Occurs in conscientious intellectuals, very sensitive persons holding responsible posts.

b) Allergy leads to spasm of the blood vessel in the brain.

Yoga : Basic set.

Treatment : Emphasise relaxation poses – neck rolling, wall postures, sirsāsana, inverted poses. Kapālabhati, Nādisuddhi.

EPILEPSY : Periodical attacks of altered consciousness associated with involuntary rhythmic movements of limbs, face etc. followed by long unconsciousness or sleep.

- * Attacks triggered by flashing light, rapid breathing (hyper ventilation) high fever in children from 6 months to 6 years of age.

Two types – (a) Grandmal or major
(b) Minor epilepsy petitmal.

Grandmal :

- * Aura – Premonition by visions, smell, uneasy feeling in head or abdomen.
- * Tonic phase – Loses consciousness, falls down. Body very stiff, bites teeth, face may turn blue because breathing stops.
- * Clonic Phase – Rhythmic movement (Spasm) of the whole body – frothing at mouth. May pass urine or stool.
- * Recovery – Complete relaxation, unconsciousness. Or prolonged sleep 1/2 – 3 hours.

Minor Epilepsy : Only alteration of consciousness. Or only one or two limbs in spasm etc.

Causes :

- 1) Many detectable causes such as – head injury, brain damage, most brain diseases tumors.

- 2) Primary cause not definitely known – Majority of the cases (90%) of epilepsy come in this group.

Heredity and birth trauma are two of the known factors.

Principle : Epilepsy starts in adolescence – the persons' mental functions start deteriorating as age advances because of repeated attacks of fits.

Yoga : Treatment : Avoid all fast breathing – Never hyper-ventilate them as you may induce an attack of fits. Hence no Kapālabhati or fast exercises.

Principles :

- a) Introduce inverted poses to increase blood supply to the brain and stabilise the nervous system – wall posture, neck rolling, Śasāṅkasana.
- b) Relaxation and meditation – to stabilise the brain wave pattern – main emphasis.
- c) Strengthen the nervous system – Antar-Kumbhaka in Nādisuddhi. All prāṇāyāmas useful.
- d) Do not introduce the breathing while teaching asanas or suryanamaskar as it may trigger off attacks.

B6. JOINT AND MUSCLE DISORDER

LOW BACK PAIN

- * Very common, chronic disabling condition. Constant pain in low back which flares up once or twice a year.

During the attacks pain is severe in low back, may go down the back of both legs. Has to remain flat in bed for 2 – 3 weeks, recovers partially but chronic pain continues. The pain may have started suddenly while lifting a heavy weight.

Causes :

1. Minor derangements in the lumbar spinal joints.
2. Tension, worry, suppressed feelings leads to increased tone in the strong postural muscles of the back.
3. Slipped Disc – The pulp of the inter-vertebral disc may slip out and compress on the lumbar nerves.
4. Less common causes included more serious diseases of the spine like T.B., tumours, prolapse of uterus in women etc.

Yoga : Relaxation – Basic set. Emphasise – back bend, Bhujangāsana, Salabhāsana.

RHEUMATOID ARTHRITIS

Joint pain, swelling – attacks every few weeks – small joints later other joints – crippling deformities after a few years.

Cause : 1. Immune disorder (Auto unity)
2. Unknown virus or similar agent. Definite cause not yet known.

Yoga :

Principles : Relaxation to allay anxiety. Basic set to stabilise, immune system.

Exercises and asanas designed to mobilise the stiff joints and strengthen the muscles round the affected joints.

Meditation.

4. PATIENTS & METHODS :

Table 1 summarises the details about the patients treated in our centres presented in this report. The principles and methods used for various ailments are detailed below :

In our centre, mostly a basic set consisting of (i) 10 to 12 Asanas, (ii) 3 to 4 pranayamas without retention of breath (Kumbhaka), (iii) Neti and Dhouti Kriyas and (iv) Meditation on 'OM' is used. The basic set of practices which will be common to most patients is given in Table 2. Normally one hour period is adjusted to fit some asanas, pranayama and meditation. Kriyas replace the asanas once a week. However, the Kriya Jala Neti and Vaman Dhouti are performed daily in some specific cases to enhance the benefits. The method is to start with simple practices and gradually build up over a period of 2–3 weeks depending on the capacity of the individual to learn. It is important to check the over-enthusiasm in the initial stages as the patients may become incapacitated with pain due to the practices.

Now we proceed to present the methods used for specific ailments in the following order :

- (A) RESPIRATORY AILMENTS
- (B) ENDOCRINE DISORDERS
- (C) GASTRO INTESTINAL PROBLEMS
- (D) CARDIO VASCULAR DISEASES
- (E) MISCELLANEOUS ALLMENTS

(A) RESPIRATORY AILMENTS

Patients with chronic respiratory ailments not cured by the usual medical and Surgical methods of treatment chose to take up Yogic practices. Amongst them were patients with chronic (seasonal and pereneal) allergic rhinitis, chronic sinusitis with repeated flare up of headache, nasal blocking and fever, chronic bronchial asthmatics with or without emphysematous changes and a few chronic bronchitis.

Bronchial Asthma :

Patients with established bronchial asthma with or without nasal allergy were selected. They all had either seasonal or pereneal episodic attack of airway obstruction (Wheezing) with intervals of normal health. Only two of the chronic patients had gone on to emphysematous changes (all of them starting with episodic asthma) leading to continuous wheezing and breathlessness. The airway obstruction was precipitated by different factors like change of weather, dust, smoke, oil, food, exercise, emotions or infection. Yoga practices used included the basic set (Table 2). Special emphasis was given on the breathing exercises; most patients were advised to practise the breathing exercises 3 times a day. Special feature was the practice of Śāsānkāsana, a forward bending pose performed slowly and repeatedly with deep relaxation during the episodes of airway obstruction.

Forty six Asthmatics were selected out of the total number of 50 asthmatics who were treated as inpatient and outpatient at Kanyakumari, Nagercoil and Trivandrum between 1977 & 79 (See Table 1).

Detailed history was taken from the patients about the severity, duration, number of attacks per week of airway obstruction and the number of tablets per week of the bronchodilator and/or antihistamine tablets used. The same data were collected during and after the initial course of 4 weeks of Yoga training under supervision. Table 3 shows the scoring of the parameters used for the analysis.

(B) ENDOCRINE DISORDERS

Patients with Diabetes Mellitus (both adult type and Juvenile type), Thyrotoxicosis Myxaedema and obeisity were treated with Yogic practices. Adult type Diabetes and Thyrotoxicosis responded very well to Yogic practices while in other cases the benefits were marginal during their stay of 2-3 weeks. We now present the cases of Diabetes Mellitus.

Diabetes Mellitus :

Patients who had established Diabetes Mellitus for 1 to 23 years were treated with regular Yogic practices. Their weight, 2 hours post prandial blood sugar in mgs%, Urine Sugar and medication were recorded before, during and after the Yogic practices. One of the insulin dependent female patients in this group had nonhealing ulcer over the toe which healed while in the hospital. One of the cases was a steroid induced diabetic.

The inpatients were supplied the calculated diabetic diet from the Hospital and the outpatients were advised to change to the required diet pattern if they were not already following the correct dieting schedule.

The following Yogic Practices were emphasised in teaching the Yogic Practices to the patients from the basic set (Table 2) :

Sarvāṅgasana, Matsyāsana
Abdominal, breathing, Kapalabhati
Agnisāra, Śankha Prakṣālana.

(C) G. I. DISORDERS

In this group we have come across 18 patients with hyperacidity, excessive Gas formation with belching, hunger pains with or without established pepticulceration (P.U.). There were a few patients with Irritable Bowel Syndrome (IBS) with symptoms of frequent urge to go to toilet with a feeling of incomplete bowel emptying. Most of them had formed stools with frequency worst in the morning before getting out for work, the 3rd or the 4th stool associated with mucus. A few of them also had loose stool with mucus and blood.

The Yogic Practices taught to these patients were –

a) P.U. Hyperacidity Syndrome :

1. Basic set (Table 2)
2. Special emphasis was given on the practise of Kriyas like Vamandhauti once a week, Agnisāra kriya and Uddīyana bandha.
3. Deep relaxation in Savāsana & Makarāsana.

b) I.B.S. & Chronic non-Specific Dysenteries – Basic set of practices with special emphasis on maintaining the inverted postures like

Viparītakarari Kriya, Sarvāṅgāsana, Halāsana and Matsyāsana for a longer time followed by Śīrṣāsana and Savāsana.

(D) CARDIO VASCULAR DISEASES :

In this category patients suffering from Angina and hypertension got treatment with Yogic practices. Rehabilitation of persons who had suffered infarction and angina has found a base by the benefits experience by them. We now present more details about the Hypertension cases.

Hypertension :- Patients in the age group 29 to 52 with established hypertension have been followed up over a period of 3 months after the initial Yoga training. One of these patients had steroid induced hypertension and the others belonged to the essential group as established after the complete profile of investigations done by their family physicians, results of which were perused at the time of medical check up at the beginning of the Yoga training.

Yogic practices were selected with a view to take them into very deep relaxation. They were asked not to practise postures which cause strain on the heart.

The practices taught to them were :-

Loosening exercises :- Hand stretch breathing, straight leg raising.

Standing postures :- Ardhaakaticakrāsana, Ardhaakakrāsana, Padahastāsana.

Sitting postures :- Padmāsana, Suptavajrāsana.

Prone postures :- Bhujangāsana, Ardhaśalabhāsana.

Breathing and Pranayamas :- Savāsana – 15 minutes
Sectional breathing;
Nādisuddhi, Śeetakāri,
Bhramari

Meditation on 'Om' sound — 10 minutes.

(E) MISCELLANEOUS GROUP

Mental ailments : Neurosis & Psychosis :

In this group we had 7 patients (table 1) with neurosis and psychosis. These patients were taught the basic set of Yogic practices and they were made to practise more rounds of each one of the Prāṇāyāmas

Nāḍīśuddhi	—	9 rounds
Sītkāri	—	18 rounds
Bhrāmari	—	10 rounds

followed by meditation for 10 minutes.

There were psychotics who were fairly controlled with drugs prior to starting Yoga therapy. They also practised the same way as the neurotic patients.

Headache and Low Back Pain :

Three patients with chronic tension head ache and seven with Chronic low back pain also underwent Yogic training. In all these cases the condition was resolved to be mainly related to tension and stress after ruling out the organic causes. Low back pain patients were given the Basic set of Yogic postures with much emphasis on backward and side bending of the lumbar spine. Particular care was taken to see that in the initial days they did not do any of the forward bending postures and they were made to develop tolerance to forward stretch through the slow introduction of simple forward bends like Pādahastāsana, Pāschimatānasana and Yoga mudra under supervision.

5. RESULTS & DISCUSSIONS

The basic data taken on patients suffering from Bronchial Asthma, Diabetes Mellitus, G. I. disorders, Hyper-

tension and Miscellaneous ailments are presented in Tables 4(a), 5(a), 6, 7, 8(a), 8(b), 8(c) respectively. From the case sheets it is noted that (subjectively) there was noticeable improvement in the general feeling of all the patients with various problems. They all felt more energetic, healthy, lively, and enjoyed the immediate effects of the Yoga Practices. This also helped them to persevere with the practices and gain self confidence that their stresses could be relieved easily through the Yoga techniques.

BRONCHIAL ASTHMA

In this preliminary study, although we lack many of the objective parametres (quantitative measurements), which have been introduced in the further studies, an attempt has been made to score the symptoms (as per the criteria in Table 3) in asthmatics. Student's 't' test was applied to the differences of the mean values before and after the practices for all the parameters selected. In Bronchial Asthma, as can be seen through this analysis in Table 4(b), there was a significant improvement with a value less than 0.005 in all the parameters used i.e. the Severity, Duration of attacks, Number of attacks per week, Nasal Allergy and Reduction in the dose of the Bronchodilators used (Medication).

We feel that the improvement that was noticed after these Yoga practices in asthmatics can be attributed mainly to deep relaxation. The other factors which might have influenced are :

- (a) Removal of the panic element - It is well known that anxiety is a prominent factor which makes an attack become worse and calls for much

more bronchodilator drugs. Through the practice of relaxation during the attacks they could easily allay their anxiety and reduce the duration and severity of individual attacks.

- (b) Development of an internal awareness of their problem through Yoga practice made them judge the level of bronchospasm and reduce the unnecessary usage of excess bronchodilators which they did earlier in their panic. The forward bending postures were of particular value in draining the nasal passages and respiratory tract.
- (c) We also feel that the stamina that these patients developed after the practice of breathing techniques, different postures and cleaning processes (Kriyas) are contributory to prevent frequent respiratory infections which is one of the important precipitating factors. This may also have a desensitising effect on the patients.

DIABETES MELLITUS

Table 5(a) shows the results in Diabetes Mellitus patients, who were treated with Yogic Practices.

The parameters used for the study include the weight of the patient, Blood Sugar, (2 Hrs PP), Urine Sugar and Medication (Insulin Units and oral drugs). A statistical analysis of this basic data in Table 5(a) is presented in Table 5(b). The results after 1 month and the follow up results after 3 months presented therein shows that the reduction in weight within the first month was not significant where as it became significant (with a P value of

0.025) at the end of 3 months. The other parameters show significant improvement with P values less than 0.005 for all parameters except for oral drugs after 1 month (P value 0.02). These significant improvements in the case of diabetics, we feel, is mainly due to reduction in weight and release of stresses by deep relaxation techniques taught to them. As already mentioned, more research is necessary to relate the effects to the causes through controlled study of various parameters.

G. I. DISORDERS

In Table 6 are presented the data taken on patients suffering from various Gastro Intestinal disorders like Gas & Acidity, Peptic Ulcers, Irritable bowel syndrome, chronic dysentery and collitis. The symptomatic presented before and after 1 and 3 months indicate clearly in the Table a qualitative improvement.

No attempt was made to score the parameters and do a statistical analysis.

The qualitative improvements noticed may be due to the physical control gained on the abdominal muscles and the peristaltic process. The other important factor is the relaxation of the entire system releasing the stress factor.

Hyper Tension

Results on 6 hypertension patients treated in our centres are presented in Table 7. The results indicate a continuous reduction in both systolic and diastolic pressures in these patients followed for 3 months. While we notice a reduction in medication, we can also find that many symptoms like Insomnia, Tension, anxiety, Angina pectoris and headache have reduced

considerably during the course of treatment. Due to these improvements the patients have continued their Yogic practices.

It is well known, that deep relaxation could be a boon to hypertensives (). Savāsan interspaced between Asanas helped these patients to learn relaxation in different postures as well. They were, through conscious habituation, were asked to use relaxation during their normal activities and this helped them to find great effects.

Miscellaneous

Tables 8 (a), (b), and (c) present data of patients suffering from Neurosis and psychosis, chronic headaches and low back pains. A glance at these Tables shows that the 3 months follow up results, qualitative in nature, indicate a clear trend of improvement in all the patients. Neurotics and psychotics experienced marked difference in the level of mental clearness due to probably reduced anxiety state. The back pain, most of the patients found greatly reduced even after a month. One of the patients suffering from intense attacks of headache found his attacks reduced to almost nil after 3 months. During the 3 months he got only 3 attacks lasting nearly a day and used 2 tablets each time. His earlier frequency of attacks was 2 per month. These improvements, we feel, are due to the removal of tensions by relaxation, reduction of anxiety level through controlled breathing and a feeling of well being through meditation.

6. SUMMARY & CONCLUSIONS

1. Investigations to examine the efficacy of therapeutical applications of Yogic Practices are presented in this communication.

2. Patients suffering from psychosomatic ailments were chosen for this investigation.
3. Forty Six Bronchial Asthmatics, 15 Diabetics, 18 suffering from G.I. disorders, 6 Hypertensives, 7 Neurotics & Psychotics, 3 with chronic headaches and 7 with disabling backaches who were treated with an integrated course of Yogic practices containing physical exercises and Yogasanas, breathing and pranayama, cleansing processes and Yogic Kriyas and Meditation.
4. Normally the duration of treatment varied from 15 days to 1 month. The patients were taught the Yogic practices by trained teachers of Yoga.
5. Follow up results for 3 months are also presented.
6. In case of Asthmatics and Diabetics a statistical analysis of the data using the Students' 't' test shows that the results are significant (Probability less than 0.005 in most cases).
7. In other cases of G.I. disorders, Hypertension, mental ailments etc. the basic data of patients clearly indicate a qualitative improvement in all the parameters presented.
8. These results indicate a distinct possibility of using Yogic practices to treat psychosomatic ailments presented in this communication.

9. While more research data is necessary to establish the mechanism by which Yogic practices help these cases, it is conjectured that the following features are responsible for the beneficial effects found in these cases :

(a) Deep relaxation

(b) Desensitization of hyperactive systems

(c) Toning up and stabilizing the nervous system by developing the tolerance and forbearance power of different organs.

TABLE - 1

Details of Patients treated in our centres

No.	Ailments	No. of Patients	Age group
1.	Bronchial Asthma	46	12-65
2.	Diabetes Mellitus	15	14-62
3.	Gastro Intestinal Disorders	18	25-52
4.	Hypertension	6	29-52
5.	Miscellaneous :		
	a) Neurosis & Psychosis	7	24-53
	b) Backache	7	10-47
	c) Headache	3	22-46
Total		102	

TABLE - 2

BASIC SET OF YOGIC PRACTICES USED IN OUR CENTRES

	Number	Duration in minutes
Śithilikarana Vyāyāma		
1. Jogging / running		2
2. Forward-Backward Bending	10 times	1
3. Twisting of the waist	10 times	1
4. Back-stretch or Tiger-stretch or Wall-posture	10 times	1
Śavāsana		2
Agnisara and Nauli		3
ASANAS		
Suryanamaskār	3 times	6
Standing :		
1. Ardhakaticakrāsana	(both sides)	1
2. Ardhaçakrāsana		$\frac{1}{2}$
3. Pādahastāsana		2
4. Parivṛtta Trikoṇāsana	(both sides)	2
Sitting		
1. Pascimatānāsana		2
2. Supta Vajrāsana or Ustrāsana		$\frac{1}{2}$
3. Yogamudrā or Śaśāṅkāsana		2
4. Ardhamatsyendrāsana	(both sides)	2
5. Mayurāsana		$\frac{1}{2}$
Savāsana		4
Prone		
1. Bhujangāsana		1
2. Salabhāsana or Dhanurasana		$\frac{1}{2}$
Supine		
1. Sarvāṅgāsana or Viparitakarani		3
2. Matsyāsana		1
3. Halāsana		2
Śavāsana		2
Śirsāsana		2
Śavāsana		2
Breathing & Prāṇāyāma		10
Kapālabhāti	120 Strokes	1
Sectional breathing	9 rounds each	4
Nādi Śuddhi	9 rounds	2
Śītkāri	5 rounds	2
Bhrāmari	5 rounds	2
Silence		5
KRIYAS		70 min.
Agnisāra — Daily in the morning		—
Jala Neti, Catheter Neti, } Weekly once		
Vaman Dhouti		

TABLE - 3

DEFINITION AND DESCRIPTION OF PARAMETERS USED
FOR STATISTICAL ANALYSIS OF PATIENTS
SUFFERING FROM BRONCHIAL ASTHMA

No.	PARAMETER	Score	DESCRIPTION (Criterial)
1.	SEVERITY		The Severity of Asthma
		1	Mild Requiring less than 6 injections per year
		2	Moderate 6 to 12 injections per year
		3	Severe More than 12 injections / Year
2.	DURATION		The duration of each episode
		1	Small less than Half Hour
		2	Moderate $\frac{1}{2}$ Hr. to 2 Hrs.
		3	long greater than 2 Hrs.
3.	ATTACKS PER WEEK		Number of episodes of airway obstruction in a week
4.	NASAL ALLERGY		Sneezing, Running Nose, Blocking of Nose (Score 1 each)
		1	If any one of the above is present
		2	If any two are present
		3	If all are present
5.	MEDICATION		Number of administrations of medicine per week including tablets, injections, Ayurvedic powders. Inhalers not included.

TABLE 4 : (a) BASIC DATA OF ASTHMATICS

Sl. No.	Registra- tion No.	Age	Duration of Asthma In Yrs.	Severity	PARAMETERS		N A	Medic- ation
					Duration	Attacks/ week		
1	IPK 1	37	4	1/1	3/2	7/2	—	7/-
2	2	28	2	1/-	3/-	7/-	—	—
3	4	43	6	2/1	2/1	2/1	—	14/7
4	6	62	4	1/1	1/1	—	—	7/7
5	10	39	3	—	3/3	7/7	1/1	7/7
6	11	47	14	—	—	7/7	—	7/0
7	12	44	8	1/1	2/1	7/2	0/0	7/0
8	18	32	4	—	—	7/7	—	—
9	24	39	10	—	2/3	—	—	—
10	33	29	3	2/1	3/1	7/3	3/2	14/7
11	34	39	6	1/1	3/1	7/5	2/2	7/3½
12	37	30	2	1/1	3/1	7/7	2/-	14/7
13	36	17	2	1/-	3/1	7/1	—	21/-
14	OPK 15	65	15	3/3	3/3	7/7	—	28/14
15	17	42	2	—	—	7/7	—	7/7
16	20	66	50	1/1	3/3	7/7	—	7/7
17	46	52	23	—	3/3	½/½	—	—
18	47	53	18	—	—	7/7	1/1	7/7
19	16	37	2	1/+	3/2	7/7	—	21/14
20	36	47	20	1/1	3/2	7/3	—	7/7
21	45	35	3	1/0	3/2	1/0	2/0	14/-
22	49	43	18	1/1	3/1	7/-	—	10½/3½
23	OPT 2	38	28	1/1	2/1	7/7	3/1	10½/3½
24	7	55	4	1/1	3/3	7/7	0/0	7/0
25	9	—	1	1/1	3/1	7/1	—	7/1
26	12	32	30	—	—	0125/0	3/1	0
27	13	31	10	3/1	3/1	7/7	0/0	7/3½
28	14	56	5	1/1	3/1	14/3	0/0	14/2
29	16	16	15	1/1	3/2	7/0	0/0	28/14
30	17	33	8	2/1	3/1	7/2	3/1	7/7
31	18	33	13	0/0	0/0	0/0	2/0	0/0
32	19	48	2	0/0	0/0	0/0	3/0	0/0
33	21	25	2	1/0	3/0	7/0	3/0	14/0
34	27	35	4	0/0	0/0	0/0	3/1	0/0
35	28	24	3	0/0	0/0	0/0	3/1	0/0
36	29	12	1	1/0	1/0	7/0	—	7/0
37	30	49	25	1/1	3/1	1/1	3/1	7/0
38	34	37	3	3/3	3/1	1/1	3/1	1/1
39	35	35	8	1/1	3/1	2/1	3/2	21/7
40	38	18	2	1/0	3/0	05/0	3/1	2/0
41	43	12	2	1/0	3/0	3/0	3/0	7/0
42	51	43	14	1/1	3/1	7/7	3/1	10½/3½
43	56	30	5	2/1	3/3	7/7	3/7	14/7
44	61	49	12	—	—	—	—	—
45	65	38	9	1/1	3/1	14/7	3/1	21/7
46	72	28	5	1/1	3/1	1/5	3/1	7/5

TABLE - 4 (b)

ASTHMA - SATISTICAL ANALYSIS (TRIVANDRUM & KANYAKUMARI)

	N	Initial	Final	Difference	t	p
Severity	39	1.05 ± 0.85	0.72 ± 0.79	0.33 ± 0.53	3.89	Less than .005
Duration	41	2.54 ± 0.95	1.24 ± 0.99	1.29 ± 1.05	7.87	"
Att/wk.	46	5.43 ± 3.41	3.28 ± 3.226	2.15 ± 3.00	4.28	"
N. A.	31	2.26 ± 1.30	0.84 ± 0.89	1.42 ± 1.15	6.88	"
Med.	42	9.46 ± 7.44	4.01 ± 4.47	5.46 ± 6.40	5.53	"

TABLE - 5 (a)

BASIC DATA OF DIABETIC PATIENTS TREATED AT
KANYAKUMARI & TRIVANDRUM

Sl. No.	Registration No.	Age in Years	Duration of Diabetes in Years	Wt. (in Kg.)		Blood Sugar (PPBS) 2 Hrs. mgms percent		Medication Insulin Units/day		Oral Drugs (No. of Tablets per day)		Urine Sugar in Percent	
				Initial	After 1 Month	Initial	After 1 Month	Initial	After 1 Month	Initial	After 1 Month	Initial	After 1 Month
1	IPK 04 59	66	1½	64	—	246	208	Nil	Nil	2	2	Nil	0.5
2	05 48	67	6½	67	65	156	150	Nil	Nil	1	Nil	Nil	Nil
3	06 41	70	5	68	65	310	200	Nil	Nil	Nil	Nil	1.5	0.5
4	07 54	69	23	68	60	250	200	Nil	70	Nil	Nil	1.0	0.5
5	08 43	49	2	48	—	195	160	Nil	Nil	2	2	Nil	0.5
6	10 22	48	8	50	54	160	150	Nil	60	Nil	Nil	2.0	Nil
7	20 41	57	3	56	50	204	194	Nil	60	Nil	Nil	Nil	Nil
8	21 33	60	3	56	54	186	164	Nil	Nil	3	Nil	Nil	Nil
9	22 19	46	5	47	—	168	150	Nil	100	1	Nil	1.0	0.5
10	OPK 11 40	73.5	1	71	68	120	170	Nil	100	Nil	Nil	1.5	0.5
11	25 62	68.5	5	67	—	180	126	Nil	Nil	Nil	Nil	0.5	0.5*
12	29 39	76	1	74	—	140	146	Nil	Nil	2	2	Nil	Nil
13	49 14	53	7	52	—	217	136	Nil	Nil	2	Nil	0.5	Nil
14	OPT 05 49	51	1½	52	52	150	200	Nil	60	1	Nil	Nil	0.5*
15	08 24	54	1½	52	52	300	160	Nil	Nil	1	Nil	1.5	Nil
							180	Nil	Nil	1	1	2.0	0.5

* Yoga Practices were discontinued after 1 month - Data not available.

TABLE - 5 (b)

STATISTICAL ANALYSIS OF DATA ON DIABETICS

Sl. No.	Parameter	No. of Patients	Initial	After 1 Month	After 3 Months	t	p
1	Wt. in Kgms	14	61.29 ± 8.60	60.86 ± 9.12	—	1.26	.15
		9	61.36 ± 6.17	—	57.78 ± 6.79	2.24	.025
2	Sugar in Urine	15	0.93 ± .77	0.27 ± .258	—	4.00	/.005
		12	0.708 ± .69	—	0.17 ± 24.6	3.23	”
3	Blood Sugar /PPBS (2 Hrs.)	15	198.8 ± 32.78	169.33 ± 27.48	—	3.24	”
		12	203.9 ± 74.26	—	162.33 ± 24.02	3.32	0.005
4	Oral drugs	9	1.47 ± .97	1.11 ± .927	—	2.25	0.02
		9	1.47 ± .97	—	0.11 ± .33	4.25	/.005

TABLE - 6

BASIC DATA - G. I. DISORDER

Sl. No.	Case No.	Age Years	Duration before Yoga (Years)	SYMPTOMS			MEDICATION		
				Description	Before	1 Month After	2 - 3 Months Before	1 Month After	2 - 3 Months
1	10	40	1	Belching	++	Reduced	Nil	Nil	Nil
2	20	29	1	Chronic Colitis Dysentery	3/day	Nil	Nil	Nil	Nil
3	37	29	4	Flatulence Constipation	++ +	Reduced Nil	Reduced Nil	Reduced Nil	Reduced Nil
4	46	29	10	(1) P.U. Syndrome (epigastric Hunger pain) (2) Loose stools (3) Mucus in stools	1 hr. 3/day ++ ++	15 min. 1/day + Reduced	Nil 1/day + Reduced	Nil Nil + Reduced	Nil Nil Nil
5	49	52	6	Midnight epigastric hunger pain Belching	1 1/2 hr. ++	15 min. Reduced	Nil Reduced	Nil Reduced	Nil Nil
6	50	26	1 1/2	I.B.S. - Frequent Stools Mucus	6/day +	2/day Nil	2/day Nil	2/day Nil	2/day Nil
7	52	39	1 1/2	Belching Heart burn	++ 1 1/2 hr.	Nil 15 min.	Nil 15 min.	Nil 15 min.	Nil Nil
8	63	23	2	I.B.S. - frequent Stools Mucus	4/day +	2/day +	2/day +	2/day +	2/day +

9	64	32	3	Epigastric burning hunger pain	2 hrs.	1 hr.	1 hr.	Antacid 6/day	6/day
				I.B.S. - Loose Stools	3/day	Normal stools	N. stools	Nil	Nil
	YCN								
10	8	52	2	Frequent Stools	5/day	2/day	2/day	Nil	Nil
11	20	26	5	Belching	++	improved	Improved	Nil	Nil
12	21	36	10	Malabsorption Syndrome Fatty diarrhoea	4/day	2/day	Nil	Flagyl	
				Undigested food particles	++	Reduced	,,	3/day	Nil
				Abdominal pain	+	Nil	,,		
13	22	26	4	I.B.S. - Frequent Stools	6/day	2/day	2/day		
				Mucus	+	+			
14	27	45	20	P.U. Syndrome	2 hrs.	$\frac{1}{2}$ hr.	Antacid 3/day	3/day	Nil
				Epigastric hunger pain		Reduced	Belladinalol 2/day	Nil	Nil
15				Burning epigastric pain- Belching	++	Nil	Nil	Nil	Nil
						Reduced	Reduced		
16	40	51	5/12	Frequent Stools	6/day	2/day	1/day		
				Mucus	+	Nil	Nil		
17	41	35	2	Frequent Stools	3/day	2/day	1/day		
				Mucus	++	+	Nil		
18	46	25	25	Belching	++	Reduced	Reduced	Nil	Nil
									Nil

TABLE - 7

BASIC DATA - HYPERTENSION

Sl. No.	Case No.	YCN	Age	Duration of illness before starting Yoga (Years)	B. P.		SYMPTOMS				MEDICATION									
					After				After											
					Before		1 Month		3 Months		Initial	1 Month		3 Months		Initial	1 Month		3 Months	
					S	D	S	D	S	D	S	D		S	D	S	D		S	D
1	5	48		4	140	90	130	80	130	80	Insomnia	Nil	Nil	Nil	Nil	Nil	Nil	Nil		
2	6	29		8	160	100	130	90	140	90	Tension Anxiety	+++ Reduced	Reduced	Reduced	Nil	Nil	Nil	Nil		
3	7	47		3	170	98	150	90	140	90	Angina	1 furlong walking pain reduced	Can walk 2 furlongs	Emdopa 3/day	2/day	1/day				
4	20	50		6	140	90	120	80	130	80	Tension	Reduced	Nil	Nil	Nil	Nil	Nil	Nil		
5	17	45		4	180	116	170	110	160	100	Insomnia	Nil	Nil	Nil	Nil	Nil	Nil	Nil		
6	60	52		10	200	90	170	90	160	80	Headache	Nil	Nil	Ismelin 40mg/day	40mg/day	25mg/day	2/day	Nil		

T A B L E - 8 (a)

BASIC DATA - MENTAL AILMENTS (NEUROSEL & PSYCHOSIS)

Sl. No.	Case No. Y.C.T.	Age Yrs.	Sex	Nature of ailment	Symptoms	Score		
						Initial	1 Month	3 Months
1	10	40	M	Depression	Depression	—	Recovered	Normal
2	23	40	F	Menopausal Syndrome	Hot flushes	3/day	1/day	1/day
3	24	37	F	Hypochondrials	Pain in left knee & Rt. shoulder	4 hrs./day 1 hr./day	1 hr. Nil	Nil Nil
4	31	30	M	Anxiety	(1) Belching on talking to strangers (2) Frequency Stools	+	+	Nil
5	32	24	M	Rabies Phobia	Fear of death	++	Reduced	Reduced
6	34	54	M	Anxiety	Tension in Head Restlessness	+	Reduced	Nil
7	36	30	M	Anxiety	Trembles while lecturing Excessive Sweating B.P. Nasal allergy Weight	$\frac{1}{2}$ hr. 5 Minutes 110/100 +++ 65 Kg.	10 Minutes 2 " 120/80 ++ 63 Kg.	10 Seconds Nil 120/80 Nil 62 Kg.

TABLE - 8 (b)
BASIC DATA - BACK PAIN

Sl. No.	Case No. Y.C.T.	Age Yrs.	Sex	Nature of ailment	Symptoms	Score		
						Initial	1 Month	3 Months
1	5	47	M	Lumbago	Lumbar pain on travelling	2 hrs./day	Nil	Nil
					Forward bending	40° Restriction	20°	20°
					Rt. lat. bending	20° "	10°	10°
2	53	18	M	Tension back pain	Dorsal spine pain on lying	3 hrs./day	½ hr.	Nil
Y.C.N.								
3	8	10	F	Lumbago	Pain lumbar spine	++	Improved	Nil
4	26	24	M	Cervical spondylosis	Neck pain	++	Reduced	Reduced
5	38	18	M	Tension back pain	Dorsal Spine Pain	+	Reduced	Reduced
6	49	10	F	Lumbago	Lumbar Pain	++	Same	
7	60	10	F	Lumbago	Lumbar Pain	2 hrs.	Nil	Nil

TABLE - 8(c)

BASIC DATA — HEAD - ACHE

Sl. No.	Case No. Y.C.T.	Age Yrs.	Sex	Duration in Year	Attacks/Month			Duration of each attack			Medication	
					Initial	1 Month	3 Months	Initial	$\frac{1}{2}$ hr.	3 hrs.	Before	After
1	4	40	M	20	1	1	—	3 days	Same	Same	Nil	Nil
2	6	46	M	15	2	1	Nil	24 hrs.	24 hrs.	Nil	2 tab/ attack	1 tab/ attack
3	44	22	F	$\frac{1}{4}$	8	Nil	Nil	6 hrs./ day	Nil	Nil	Nil	Nil

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